Workshop on
UK-US Collaboration on Energy RTD

Monday 24th May 2010

Omni Penn Hotel, Pittsburgh, Pennsylvania

Notes of Meeting

1.0 Welcome and Introductory Session

1.1 Fred Glaser and John Oakey presented a summary of the UK-US MOU & Fossil Energy Implementing Arrangement

1.2 John Oakey and Bob Romanosky discussed the purpose of workshop is to provide the UK and US representatives with an update on industry-focused RTD priorities in both countries in the area of Fossil Energy R&D. It will also act as a forum to explore potential new opportunities for future collaborations under the UKDECC-USDOE MOU on Energy RTD.

2.0 Review of UK and US Energy RTD Priorities and Funding Opportunities

2.1 Bob Romanosky presented information of the US DOE priorities US DOE

2.2 Derek Allen presented information of research priorities for UK DECC/SB/RC

3.0 **Review of ideas for possible collaborations**

3.1 John Oakey reviewed the new areas for potential collaboration

- Sensors & Instrumentation
- Carbon Abatement Technologies
- Advanced Materials

4.0 **New Collaboration Offerings** Individuals from US and UK presented information on current/upcoming projects that could be offered as part of any new collaborative effort, provided balance was achieved between the US and UK inputs.

4.1 Sensors & Instrumentation

Stephen Fasham (Oxsensis) – Sensors for Gas turbine Efficiency
Susan Maley (NETL) - Sensor Development
Brian Stratizar (NETL) - CO_2 monitoring
Kevin Dodds (BP Alternative Energy) - CO_2 storage effective monitoring

4.2 Carbon Abatement

Sean Black (Doosan) - Amine scrubbing pilot plant (CCPilot100+)
Frank Morton – National Carbon Capture Center (NCCC)
Mike Knaggs (NETL) –DOE Algae Research
Kevin Dodds (BP Alternative Energy) – Efficient water gas shift (eWAGS)
Peter Tune (CPI) - Algae for CO2 Capture (AlgaeCAT)

4.3 Advanced Materials

Mike Santella (ORNL) – Creep Strength Enhanced Ferritic Steels
Craig Degnan (EON UK) – Ferritic Steels/Type IV Cracking (IMPACT)
Geert Verhaeghe (TWI) – Ferritic Steels/Type IV Cracking (VALID)
Nigel Simms (Cranfield) – Gas Turbine Corrosion Lifing Methods and Testing (CLIMATE)

Nigel Simms (Cranfield) – Coatings for gas turbines (CASET)

5.0 Break-out Sessions Results, Discussion and Action Items

Break-out sessions were held for each of the three identified areas to firm up ideas in areas of common interests and discuss path forward

5.1 Sensors and Instrumentation

- Provisional Champions – US – Susan Maley; UK – Stephen Fasham/Kevin Dodds
- Information Exchange would be the first step
- Areas of interest - fast response temperature sensors, fiber-optic sensors for harsh environments and novel materials
- Conference call will be set up to determine if there is any interest in CO_2 monitoring **ACTION Champions**

5.2 CO_2 Capture – technology development/demonstration

- Provisional Champions – US – Tim Fout/Frank Morton; UK – Sean Black
- Sean Black will gauge level of interest at Doosan and other consortia members
- Kevin Dodds will gauge level of interest at BP
- The first step would be to conduct workshops with potential participants, arrange site visits and hold a dialogue on performance, testing, etc. This could lead to demos with Doosan and others with the NCCC **ACTION Champions**

5.3 CO_2 Capture - Algae

- Provisional Champions – US – Michael Knaggs; UK – Peter Tune
- Collaboration could focus on facilitating the sharing of public information and introductions of project partners
- Areas of interest - Standard lab analysis methods, performance assessment and post-production value proposition and baseline approaches
- A possible way forward would be to arrange a workshop to discuss details

ACTION Champions to arrange

5.4 Materials - creep strength enhanced ferritics
(could be included under existing 'materials' task)

- Provisional Champions – US – Mike Santella; UK – Geert Verhaeghe
- Collaboration could involve practical research as well as information exchange through workshops
- Participants would include ORNL from the US and TWI, EoN from the UK. Other potential partners were – B&W, NETL - Albany
- Areas of interest were improved performance of current steels through processing/welding heat treat, new steels? and life assessment?

ACTION Champions to develop ideas

Further 'materials' collaborations were possible in the area of coatings

ACTION Nigel Simms to consider under existing tasks

5.5 Discussion and Action Items

- Draft single-paragraph, descriptions for collaborations as discussed in the break-out sessions should be provided soon after the meeting. **ACTION Champions**
- Champions should seek confirmation of interest in the areas of interest agreed at the workshop and update the paragraph description as necessary.

ACTION Champions

- Once agreement was reached in each collaboration area, the US and UK champions should draft a standard format 2-page task proposal to establish the basis for the quid-pro-quo. Any tasks that are going to move forward need to have 2-pagers drafted by the next Materials meeting to be held in the Sept/October timeframe **ACTION Champions**
- Feedback would be provided to the champions at this stage
- Pat Rawls will provide 2-page forms to attendees **ACTION Pat Rawls**
- Once finalised, the 2-page proposals should be provided to Fred Glaser for HQ approval
- Bryony Livesey wanted to know if there is the possibility of collaborating on plant asset management and CFD. Potential partners would have to be identified. This would require further discussion outside the meeting.
- Fred Glaser will post presentations onto a new secure area of the existing US-UK Collaboration website and distribute password to attendees.